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NOTATIONAL ANALYSIS OF UEFA EUROPA LEAGUE MATCH MALMÖ FF - CHELSEA FC

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Abstract: The purpose of using notation analysis is to collect as much data as possible regarding the abilities and characteristics of individual players, as well as the entire team. Using the collected database, coaches can make objective decisions about the way individual players and the entire team play. The paper analyzes a match between FF Malmö and FC Chelsea, played in the UEFA Europa League round of 32. The overall score was 1:2 for Chelsea. A notational scouting analysis was conducted using a programme called Pinnacle Studio 15. Offensive actions were analyzed, from the moment the team came into possession of the ball. Player activities were recorded by means of the notational system. A total of 30 elements of offensive tactics were monitored. The possession of the ball (66/34), the total and the totally correct significantly higher number of passes (781/321; 741/265), the shot on goal inside the penalty area (4/1) and the higher percentage of successful dribbles in the game 1:1 (68, 75/50) can be singled out as significant factors in the end result in favor of FC Chelsea. All that has been analyzed indicates the way FF Malmö plays, as well as the way in which one should stand against such a play, which is the primary goal and reason for conducting the notational analysis.

Keywords: *notational analysis, scouting, technical and tactical evaluation, movement analysis, football*

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INTRODUCTION

Football, as the most popular game in the world, attracts millions of people around the world with its dynamic and attractive character. Conducting the analysis of the essence of the football game itself, it can be concluded that, of all sports, football is the closest to real life and everything that it carries within itself. In terms of its specifics, football differs from other sports by the communication between participants in precisely defined spatial and temporal conditions, the most massive support of all types of media and, of course, the dictated rules of the game.

Frequent and unexpected change of offensive and defensive actions, the speed of ball movement, the complexity and number of situations that can occur during the game are just some of the features of football.

Namely, today's football players run great distances with higher intensity than one or more decades ago. In addition, the number of matches during competitive seasons is much higher, as well as the number of training sessions during one microcycle or mesocycle, which of course increases the risk of unwanted injuries (Marković, Bradić, 2008).

Achieving a high level of technical training and physical preparation has led to the emergence of universal players who are equally good at all parts of the field and in all phases of the game, ie. players who defend and attack equally well (Velebit, 2003).

In sports like football, notational analysis represents an ideal field for quality analysis, because this game consists of a large number of combinations of individual elementary techniques and tactics, but also group and team work. In football, this type of analysis is used to achieve qualitative improvement of different aspects of the entire team's play, both at individual and team level. Besides, notational analysis also helps "read" the opponent's actions.

The purpose of using notational analysis is to collect as much data as possible regarding the abilities and characteristics of individual players, but also the entire team. Using the collected database, coaches can make objective decisions about the way individual players or the entire team play. (Bašić i sar., 2015).

Notational analysis can be performed manually and via computer. An important place in this analysis is occupied by the objectivity of the analyst or researcher who notes the monitored parameters during the game. In addition to the analysis of the movements of individual players, one can also note the tactical success, technical capabilities, but also a huge number of other statistical data. In order to achieve absolute progress in the play of individuals or the entire team, a significant role is played by objective informtion collected by means of notational analysis (Sporiš i sar., 2014).

Analyzing a football match using the notation system takes up more and more space in training technology that is focused on the individual development of players and the team. (Bašić i sar., 2015).

A number of researchers present the potentials of notational analysis through five analyzed play factors (Hughes & Franks, 2004; Sporiš i sar., 2014):

Movement analysis

It is presented throught a study by Reilly and Thomas (1976), who designed a special methodology to analyze individual player movements by positions in the team, but also to analyze so-called work rhythm of players. This methodology for movement analysis has been perfected over the last 40 years, and as such, it is used in almost all sports.

Education

It is useful for both coaches and players. In his study, Franks (1997) showed that a certain situation in play and its solution can represent an improvement of certain performances in an athlete. A research by Hughes (2004) proved that feedback and recognizing feedback have a high educational impact on both the coach and the player.

Tactical evaluation

The significance of tactical evaluation in football was also proven in a study by Yamanaka et al. (1997), which involved a computer-based notational analysis of matches played at the Asian qualifiers for the 1994 World Cup.

Database development

In his research, Garganta (2001) explained modelling footbal play through a high level of impact that modelling has on the analysis of modern trends in the game. Besides, modelling can play a significant role in resolving issues related to training structure.

Technical evaluation

Technical evaluation is an analysis of the technical performance of players in real conditions through a specialized computer system, which has been developed to be able to provide a valid technical elementary training of players depending on the level of competition. This way, through the obtained results, coaches can select players with the necessary performance for a certain level of competition through the obtained model (Partridge, et. al., 1993). Namely, the winner in elite international ranks of competitions is decided by details in the form of players with superior physiological and motor performances. (Reilly & Holmes, 1983).

The aim of this paper is to point out the need and quality of technology used to evaluate situational efficiency, individuals and the entire team by means of notational analysis and to point out the advantages of quality information obtained by objective indicators that can affect the training process and sports results.

METHOD

The match between FF Malmö and FC Chelsea played in the round of 32 of the UEFA Europa League on February 14, 2019 was analysed. The final score of the match was 1: 2 for FC Chelsea.

A notational scouting analysis was conducted in a programme called Pinnacle Studio 15. The programme is highly compatible for match scouting analysis and for match image processing.

Attacks were analysed from the moment the team came into the possession of the ball. Player activities were noted using the notational system. There were 30 offensive tactical elements which were selected for the purpose of this paper.

The formations taken by the teams were analysed at the beginning of the game, but also at the beginning of the second half.

- % ball possession,
- number of accurate passes,
- number of shots,
- on target and
- off target.

Pass:

1. 6-9 passes - 6 do 9 consecutive passes between teammates of the given team;
2. 10+ passes - 10 or more consecutive passes between teammates of the given team.

Shots:

1. inside 16m+ - shot on target, inside penalty box;
2. inside 16m− - shot off target, inside penalty box;
3. out of 16m+ - shot on target, outside penalty box;
4. out of 16m− - shot off target, outside penalty box.

Types of attack:

1. quick - it refers to counter and quick attacks, up to 15s long, against the opponent's organized back but unorganized front line;
2. organized - continuous attacks, up to 15s long, against the opponent's organized back and organized front defensive line.

Beginning of attack:

1. defensive 1/3 - attack initiated in the defensive 1/3 of the pitch;
2. central 1/3 - attack initiated in the central 1/3 of the pitch;
3. offensive1/3 - attack initiated in the offensive 1/3 of the pitch.

Dribbling:

1. dribbling+ - successfully executed dribbling;
2. dribbling− - successfully executed dribbling.

Free kick:

1. defensive free kicks - free kicks taken from the own half of the pitch;
2. offensive free kicks - free kicks taken from the opponent's half of the pitch.

Air duels:

1. air duel+ - successful air duel, ball won in front of opponent;
2. air duel− - unsuccessful air duel in attack.

Separate variables:

1. corner kick- kick from the corner;
2. unsuccessful attack - attacks in which the team entered the penalty area, but without shots on target;
3. lost balls - number of lost balls;
4. ball passed back to the goalkeeper - passing the ball back toward the goalkeeper.

Key passing:

1. key passing executed from field 1 - left side of the offensive zone;
2. key passing executed from field 2 - centre of the offensive zone;
3. key passing executed from field 3 - right side of the offensive zone;
4. key passing executed from field 4 - central zone.

RESULTS

Graph 1. *Presentation of match stats for both teams, for observed parameters*

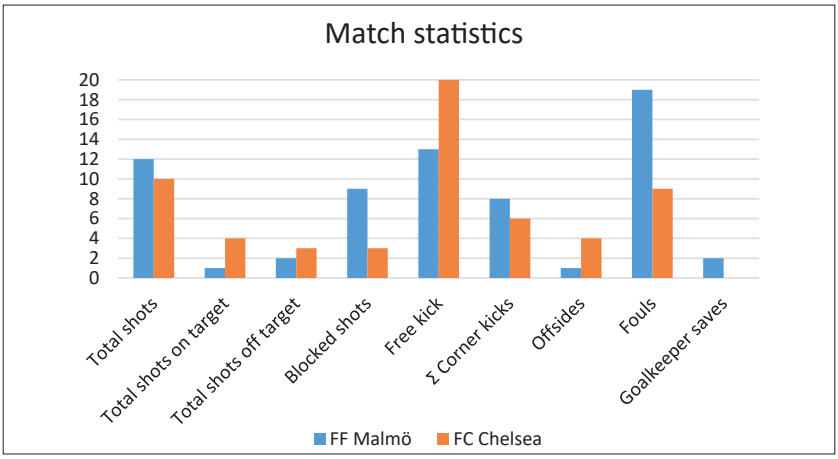

Table 1. *Match stats presented on Graph 1.*

Parameters of play for notation	BP	TS	TST	TSOT	BS	C	O	F	GS	TP	AP	UP
FF Malmö	34%	12	1	2	9	8	1	19	2	321	265	56
FC Chelsea	66%	10	4	3	3	6	4	9	0	781	741	40

BP-ball possession; TS-total shots; TST-total shots on target; TSOT-total shots off target; BS-blocked shots; C-corner kicks; O-offsides; F-fouls; GS-goalkeeper saves; TP-total passes; AP-accurate passes; UP-unsuccessful passes

Graph 1 and Table 1 indicate that out of the total of 22 shots on target executed by both teams, 10 shots were performed by the visiting team, FC Chelsea player, while home team, FF Malmö players scored 12 shots. The visiting team gained a statistically significant advantage in blocked shots on target (9/12), which shows better organization and placement in the defence phase, but also in the total number of realized and accurate passes (741/781), which is shown in Graph 2.

Graph 2. *Statistical presentation of pass play in entire match: number of total, accurate and unsuccessful passes*

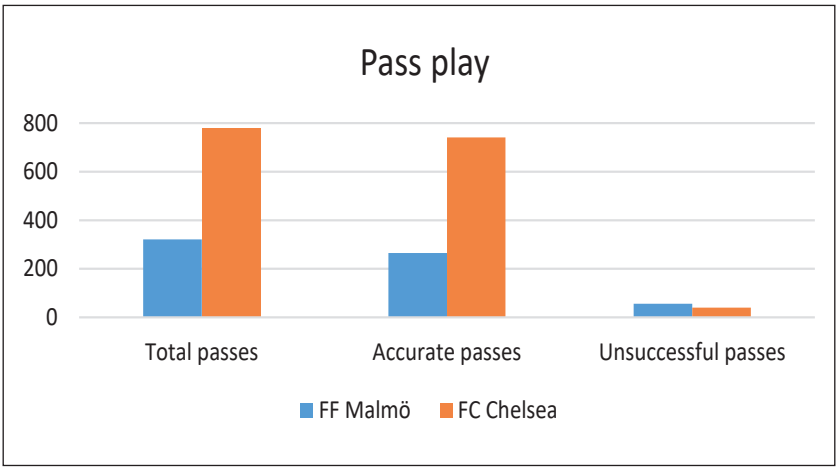

Table 2. *Accompanying parameters obtained by notational analysis of match, expressed in %*

NOTATIONAL PARAMETERS IN %	FC CHELSEA	FF MALMÖ
Shot on target inside 16m-accurate	40	8,3
Shot on target inside 16m-inaccurate	30	50
Shot on target outside 16m-accurate	0	0
Shot on target outside 16m-inaccurate	30	41,7
Quick attack up to 15sec	26,1	78,6
Continuous attacks over 15sec	73,9	21,4
Attack initiated from defensive zone	44,4	26,1
Attack initiated from central zone	22,2	52,2
Attack initiated from offensive zone	33,3	21,7
Successful dribbling	68,75	50
Unsuccessful dribbling	31,25	50
Interruptions executed from own half	52,6	66,7
Interruptions executed from opponent's half	47,4	33,3
Successful air duels	53,6	46,4
Unsuccessful air duels	46,4	53,6
6-9 consecutive passes between teammates	28,6	66,7
10 + consecutive passes between teammates	71,4	33,3
Accurate cross	45	33,3
Inaccurate cross	55	66,7
Unsuccessful attacks	20,5	16
Pass to goalkeeper	1,5	1,6
Key pass from zone 1	30,76	33,3
Key pass from zone 2	7,7	20
Key pass from zone 3	38,4	26,7
Key pass from zone 4	23,1	20

The first goal of the match was scored by the English team in the 30th minute, and the second one in the 58th minute for a 2-0 lead. FF Malmö only managed to mitigate the defeat in the 80th minute for the final 1: 2 for the team from England.

From the opponent's penalty area, FC Chelsea sent 40% of accurate shots on the opponent's goal, i.e. shots on target, 30% were shots from the penalty area, and off target. The team from England also executed 30% of shots outside the opponent's penalty area, but all those shots went off target.

Table 2 indicates that out of the total number of shots from the opponent's penalty area, FF Malmö sent a total of 8.3% of shots on target, and 50% of the total number of shots were off target, while 41.7% of shots that were executed outside penalty area, were also off target.

FC Chelsea played most of their attacks in a time interval of over 15s (73.9%), as evidenced by greater ball possession (66%). Namely, the higher percentage of continuous attacks is shown by the fact that the highest percentage of attacks started from the defensive zone (44.4%). In the second place in terms of the percentage of attacks of the visiting team is the offensive zone itself, where they managed to take possession by pressing and then attacking the opponent's goal with 33.3% of the total number of attacks.

The analysis shows us that FF Malmö took most of its attacks from the central zone, i.e. the attack organization area because this was the area where it most often managed to take possession of the ball. An indicator of that is the higher percentage of performed quick attacks up to 15s in relation to their opponent.

The element of the play that represents an important factor in achieving results is certainly dribbling, and according to notational analysis, it was on the side of FC Chelsea with a relative percentage difference (68.7%/50%). Namely, dribbling is an element of football technique, but also a basic means of individual tactics in a 1:1 ratio. A team that has a larger number of individuals who perform this element of technique in a quality way during play, will find it easier to achieve a desired sports result - victory.

A greater number of free kicks by FF Malmö from their own half, shows that FC Chelsea had a faster defensive transformation and quality closing of all free zones that were attacked during the quick attack of FF Malmö, as well as doubling of opposing players, which resulted in taking possession without fouls.

The characteristic of continuous attack is high possession of the ball and a large number of exchanged passes, which was the philosophy of the game of FC Chelsea, and the main indicator of this is that of the total number of attacks as much as 71.4% of them took place in passing between players with over 10 continuous passes.

As for the key attacks, notational analysis indicates that the FC Chelsea team performed more attacks from zone 3, i.e. the attack field of the

right corridor with 38.4%, from the attack field of the left corridor 30.76%, from field 2 there were only 7.7% of the attacks, while 23.1% were taken from the central field through deep passes behind the opponent's back. FF Malmö also broke more on the flanks with 33.3% on the left side, 26.7% on the right side, 20% in the centre from field 2, and 20% of the attacks from the central field.

DISCUSSION

The result obtained using the conducted notational analysis, shows that the team that scored the first goal in this match, in the end, won. This claim is supported by a research by Michailidis (2014), which analyzed the matches at the FIFA World Cup 2014, during which it was discovered that 75.4% of the teams that scored the first goal also won the match.

The teams that performed more shots on target, as was the case with the FC Chelsea team in our study, ultimately won, which is confirmed by a study conducted by Lago-Peñas, et al. (2010) and Szwarc (2004), in which they analyzed teams from the 2002 FIFA World Cup.

In order to discriminate in the best possible way against the differences between the football teams that achieved victories, a survey of Castellano, Casamichana and Lago (2012) was conducted, including an analysis of 177 football matches from three World Cups (Japan / Korea, Germany and South Africa). Variables from two different aspects were observed, namely the variables related to the attack phase and the defensive phase. The conclusion of this study is that the difference between the teams that won, or played a draw, or lost the game in possession of the ball first and foremost lies in the success of the play in the attack phase, which includes the following monitored variables: total number of shots, total number of shots on and off target, ball possession, the number of fouls as well as corner kicks.

In this research, the number of blocked shots can be taken as a discriminating factor, while the total number of shots on the opponent's goal in our research goes in favor of the team that lost the game.

A similar research was conducted by analyzing 31 matches of the 2012 European Football Championship. The research referred to the ways of scoring goals, the number of goals scored, as well as the length of passes. The obtained results show that the teams that achieved victories at this European Championship scored more goals from corner kicks and from shots taken from the penalty area, which coincides with this research. Also, the results of this research coincide with the conclusions reached by Muhammad, Norasrudin, Rahmat (2013) in terms of the large number of short passes made by the winning team.

A large number of researchers have analyzed the ways of achieving sports results through different segments of play and using different ways and methods of analysis. Namely, this research shows that the team with a larger number of connected passes in one action (6-9, and 10+) also achieved a victory, which does not agree with the research conducted by Plummer (2013) on a sample of 10 elite matches of the English football league. On the other hand, the results of both studies absolutely coincide in that the number of goals scored with a kick from the penalty area is significantly higher, which was confirmed by the conducted notational analysis.

The segments of play, such as greater ball possession and a larger number of total and accurately executed passes, especially in the final phase, i.e. in the last third of the field, proved to be highly predictive factors in achieving victory. Namely, our results are confirmed by the results obtained by Lago-Peñas, Lago-Ballesteros and Rey (2011) regarding the analyzed matches during the three seasons of the Champions League. Their research shows that the success of one team depends on a large number of executed, but also accurate passes. Significantly greater possession of the ball is on the side of the winning team, and this is confirmed by research by Lago-Peñas and Dellal (2010). Of course, there are deviations from such claims, which could depend on the style of play preferred by certain teams, but also on the country they come from. An example that a larger number of total, but also accurate passes does not have to be a predictor of victory is a conclusion reached by Kubayi and Toriola (2020) in their research.

Kicking – passing, as one of the most significant tactical means in the game of football, which highly influence the end result of a match, was the subject of analysis by Yamanaka et al (1993). It was confirmed then that there are different playing styles in relation to the part of the world where the teams come from. Thus, it was suggested that teams coming from the English Premier League, base the concept of their attacks on long passes on medium and long distances. In the present research, notational analysis proved that precisely English FC Chelsea won the match in the UEFA Europa league, executing 741 accurate passes out of 781 passes in total, which does not coincide with the Yamanaka research, and can be explained by the constant progress and speeding up of the game of footbalin the past decades. Also, Luhtanen et al (2001), analyzing the matches from the two European Championships in 1996 and 2000, came to the conclusion that the percentage of successful passes can be a predictor of the success of a football team, which was the case in our research.

CONCLUSION

The analyzed topic indicates the type of play preferred by the team of FF Malmö and FC Chelsea, which is the primary goal of the notational anal-

ysis of a football match. In this research the authors came to the conclusion that the parameters such as greater ball possession, the total number of shots on target, total and accurate passes, but also a better handling of the tactical requirements of the 1:1 play, can be considered valid parameters that can determine the winner in a football match.

Namely, the notational analysis of opposing and own players, regarding the success in certain segments of the play and the level of mastery of the technical and tactical elements of the play, should be of great use for the qualitative planning and organization of the training process.

REFERENCES

1. Bašić, D., Barišić, V., Jozak, R. & Dizdar, D. (2015). *Notacijska analiza nogometnih utakmica*. Zagreb: Leonardo Media.
2. Castellano, J., Casamichana, D. & Lago, C. (2012). The use of match statistics that discriminate between successful and unsuccessful soccer teams. *Journal of human kinetics*, 31, 137-147.
3. Franks, I. M. (1997). Use of feedback by coaches and players. *Science and football III*, 267.
4. Garganta, J. (2001). Tactical modelling in soccer: a critical view. *Notational Analysis of Sport IV*. Porto, 58-64.
5. Hughes, M. & Franks, I. M. (Eds.) (2004). Notational analysis of sport: Systems for better coaching and performance in sport. Psychology Press.
6. Hughes, M., D. (2003) Notational Analysis of Soccer. In T. Reilly (Ed.) *Science and Soccer II*. London: E. & F. N. Spon, pp. 245-264.
7. Kubayi, A. & Toriola, A. (2020). Match Performance Indicators that Discriminated Between Winning, Drawing and Losing Teams in the 2017 AFCON Soccer Championship. *Journal of Human Kinetics*, 72(1), 215-221.
8. Lago-Peñas, C. & Dellal, A. (2010). Ball possession strategies in elite soccer according to the evolution of the match-score: the influence of situational variables. *Journal of human kinetics*, 25, 93-100.
9. Lago-Peñas, C., Lago-Ballesteros, J., Dellal, A. & Gómez, M. (2010). Game-related statistics that discriminated winning, drawing and losing teams from the Spanish soccer league. *Journal of sports science & medicine*, 9(2), 288.
10. 1Lago-Peñas, C., Lago-Ballesteros, J. & Rey, E. (2011). Differences in performance indicators between winning and losing teams in the UEFA Champions League. *Journal of human kinetics*, 27, 135-146.

11. Luhtanen, P., Belinskij, A., Häyrinen, M. & Vänttinen, T. (2001). A comparative tournament analysis between the EURO 1996 and 2000 in soccer. *International Journal of performance Analysis in sport*, 1(1), 74-82.
12. Marković, G. & Bradić, A. (2008). *Nogomet: Integralni kondicijski trening*. TVZ, Udruga Tjelesno vježbanje i zdravlje.
13. Michailidis, Y. (2014). Analysis of goals scored in the 2014 World Cup soccer tournament held in Brazil. *International Journal of Sport Studies*, 4(9), 1017-1026.
14. Muhamad, S., Norasrudin, S. & Rahmat, A. (2013). Differences in goal scoring and passing sequences between winning and losing team in UEFA-EURO Championship 2012. *World Academy of Science, Engineering and Technology* (74), 118-123.
15. Partridge, D., Mosher, R. E. and Franks, I. M. (1993). A computer assisted analysis of technical performance – a comparison of the 1990 World Cup and Intercollegiate Soccer. In: *Science and Football II* (edited by T. Reilly), pp. 221-231. London: E & FN Spon.
16. Plummer, B. T. (2013). Analysis of attacking possessions leading to a goal attempt, and goal scoring patterns within men's elite soccer. *Journal of Sports Science and Medicine*, 1(1), 1-38.
17. Reilly, T. & Holmes, M. (1983). A preliminary analysis of selected soccer skills. *Physical education review*, 6(1), 64-71.
18. Reilly, T. (1976). A motion analysis of work-rate in different positional roles in professional football match-play. *J Human Movement Studies, 2*, 87-97.
19. Sporiš, G., Barišić, V., Fiorentini, F., Ujević, B., Jovanović, M. & Talović, M. (2014). *Situacijska efikasnost u nogometu*. Glina: Lena sport.
20. Szwarc, A. (2004). Effectiveness of Brazilian and German teams and the teams defeated by them during the 17th Fifa World Cup. *Kinesiology: International journal of fundamental and applied kinesiology, 36*(1), 83-89.
21. Yamanaka, K., Hughes, M. and Lott, M. (1993). Association football. In: *Science and Football II* (edited by T. Reilly), pp. 206-214. London: E & FN Spon.
22. Yamanaka, K. U. N. I. O., Liang, D. & Hughes, M. I. K. E. (1997). An analysis of the playing patterns of the Japan national team in the 1994 World Cup qualifying match for Asia. *Science and football III*, 221-228.
23. Velebit, R. (2003). *Savremeni fudbalski trening*. Beograd: Sportska akademija.